CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 89-110

SITE CLEANUP REQUIREMENTS FOR:

JONES-HAMILTON COMPANY
8400 ENTERPRISE DRIVE
NEWARK, ALAMEDA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the "Board") finds that:

1. Jones-Hamilton Company (hereinafter called the "discharger") operates a chemical blending and packaging facility located at 8400 Enterprise Drive, Newark, Alameda County (the "Site").

2. The discharger has handled and/or stored various chemical compounds at this Site since 1956. These chemical compounds have included, but are not limited to, gasoline, sodium bisulfate, hydrochloric acid, arsenic acid (75%), chromic acid, cupric acid, formaldehyde, triethanolamine, pentachlorophenol, a variety of surfactants, and a variety of hydrocarbon-based solvents.

3. In March of 1985 Cleanup and Abatement Order (CAO) No. 85-009 was issued to the discharger because of several violations of their Waste Discharge Requirements, Resolution No. 70-66. These violations involved the disposal of wastes that were not permitted into two surface impoundments.

4. CAO No. 85-009 required the discharger to abate the illegal disposal of wastes not permitted by Resolution No. 70-66 into the impoundments and to submit an amended Report of Waste Discharge (ROWD) for the impoundments. CAO No. 85-009 also required the discharger to develop a plan for the cleanup of any contaminated soil.

5. CAO No. 85-009 was amended by CAO No. 85-016 in June of 1985. CAO No. 85-016 included provisions and a time schedule for the design and construction of a wastewater treatment system, submitting a ROWD and obtaining an NPDES permit for the discharge of treated process wastewater and stormwater runoff from the Site, and for the development and implementation of a closure plan for the surface impoundments.

6. In May of 1986 the Board issued an NPDES permit, Order No. 86-32, for the discharge of stormwater runoff from the discharger's property. Order No. 86-32 also allowed for the discharge of treated wastewater from the surface impoundment closure. All process wastewater from the Site is being

recycled, so the NPDES permit prohibits the discharge of any process wastewater.

7. CAO No. 85-009 and CAO No. 85-016 were amended by CAO No. 86-015 in October of 1986. CAO No. 86-015 included provisions and a time schedule for a revised stormwater runoff management based on the chemicals found in the surface impoundments. Also, other tasks were included to further characterize the nature and extent of chemicals emitted from the surface impoundments, including a Hydrogeologic Assessment Report. The two surface impoundments were specified to be closed by October 1, 1987. This closure date was extended in September 1987, by the Board's Executive Officer, until October 1, 1988 for reasons due impart to delays in reviewing by Regional Board staff. The remedial method chosen for pond closure was encapsulation by a slurry wall followed by a synthetic liner, clay, and an asphalt cover, with extraction wells to create an inward gradient. The slurry wall was completed in October 1988, and emplacement of the asphalt cover was completed in April 1989. Extraction wells and piezometers are scheduled for installation in June, 1989. Pump tests are planned for July, 1989 with the system operational by September, 1989. The documentation of completed tasks required by CAO No. 86-015 will be provided by the discharger.

8. As a result of studies conducted by the discharger in association with the closure of the surface impoundments, a number of chemicals were found in the groundwater beneath the Site. Pentachlorophenol (PCP) and 1,2-Dichloroethane (DCA) were discovered in the shallow groundwater zone (0-20 feet) beneath the Site. The main source for the PCP was the impoundment areas, with other isolated occurrences discovered. DCA was found to be extensive beneath the Site and was not found in the surface impoundments. The source of the DCA has not been substantiated . Additional chemical compounds such as 1,1,1-trichloroethane, 1,1-dichloroethane, 1,1-dichloroethene, benzene, chloroform, ethylbenzene, methylene chloride, 1,4 dichlorobenzene, aphthalene, toluene, 2-butanone, trichlorotrifluoroethane, 1,2-dichlorobenzene, 4-methylnaphthalene, 2,4,5-trichlorophenol, xylene, 4-methylphenol, 2,4,6-trichlorophenol, 2-methylphenol, diethylphthalate, and benzic acid were found at generally lower concentrations. Also found in the shallow zone, and related to a fuel leak which was documented in November of 1986, are elevated levels of total volatile hydrocarbons (due to gasoline), benzene, toluene, ethylbenzene, and xylenes. To fully characterize the nature and extent of chemicals in the shallow zone beneath the discharger's facility, additional hydrogeologic investigations and pollution characterization are necessary. This Order provides for a review of interim and final remedial actions according to specified time schedules.

9. DCA has been found in the Newark Aquifer, which underlies the shallow zone. In the vicinity of the Site the Newark Aquifer is located approximately 50-70 feet below the ground surface and is separated from the shallow zone by the Newark Aquitard (20-50 feet thick). The mechanism for the migration of DCA to the Newark Aquifer has not been positively identified but may be related to inadequate well construction or discontinuous hydraulic interconnection between the shallow zone and the Newark Aquifer, or other mechanisms. Additional hydrogeologic investigations and water quality testing are warranted in the Newark Aquifer.

10. The Newark Aquifer in the vicinity of the discharger's facilities, and for some distance eastward, is saline (chloride concentrations beneath the area average from 15,000 to 20,000 PPM). Further eastward the Newark Aquifer contains freshwater which is currently used for domestic and industrial purposes. The general regional gradient of the Newark Aquifer is westward toward the San Francisco Bay; that is, from the freshwater zones in the east toward the saline zones in the west. Much of the salinity in the western parts of the Newark Aquifer, including below the discharger's facility, is the result of saltwater intrusion due to past overdrafting for domestic and industrial use.

11. The Alameda County Water District (ACWD) is in the process of implementing a Salinity Barrier Project (SBP) which will withdraw saline water from the Newark Aquifer. The SBP is a line of extraction wells which serve two functions: first, under pumping operation, the wells will create a hydraulic trough along the bay to prevent the intrusion of saline water into potable aquifers during dry periods when groundwater levels are below sea level; second, the SBP will cause freshwater from the eastern recharge zones of the Newark Aquifer to migrate towards the SBP wells, enabling domestic and industrial use of groundwater to resume in portions of the Newark Aquifer which are now saline. All water in the Newark Aquifer west, or bayward of the SBP wells will remain saline. The Site, and the contaminated zone in the Newark Aquifer, are west of the SBP wells as currently designed.

12. Implementation of the SBP near the Site may accelerate the migration of chemicals both horizontally within the Newark Aquifer and vertically from the shallow zone to the Newark Aquifer. The ACWD pump tested wells T-27 and T-11 in 1985 (July through October) at combined rates from 750 to 1,050 gpm. These wells are located approximately 1,600 to 2,400 feet from ACWD wells 2P2, 2P3 (E56), and 2P4 (E57). Drawdowns in the shallow zone and in the Newark Aquifer were observed to be 1-2 feet and 7-9 feet, respectively, in the vicinity of the Site. In the absence of actions to prevent it, chemicals could migrate to the SBP extraction wells, possibly requiring

cleanup of the groundwater prior to the planned surface discharge. ACWD well 2Q2 was also pumped (prior to 1981) at about 150 gpm for a total of 2 years as part of a materials research program.

13. Chemicals may migrate from the shallow zone to surface waters, and/or to the Newark Aquifer, irrespective of actions associated with ACWD's SBP. Portions of the Centerville and Fremont Aquifers, which aquifers have beneficial uses, are known to exist in the general vicinity of the Site. The Board's concern in the shallow zone and in the Newark Aquifer arises primarily from the possibility of chemical migration to other waters having beneficial uses.

14. Neither the Newark Aquifer nor the shallow zone near the Site has any known current beneficial uses. Potential beneficial uses of the Newark Aquifer underlying the Site include use as industrial and process service water supply.

15. It is the intent of the Board to adopt Site Cleanup Orders for those sites affecting the ability of ACWD to implement the SBP. It is also the intent of the Board to require proper abandonment of all wells which may provide a conduit for chemicals to migrate from the shallow zone to the Newark Aquifer.

16. Proposed surface discharges from the SBP extraction wells would discharge to the South San Francisco Bay by means of Plummer Creek and the Newark Slough and/or through other means yet to be proposed (pipeline etc.).

17. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) dated December 1986. The Basin Plan contains water quality objectives and beneficial uses for San Francisco Bay and contiguous surface and ground waters.

18. The existing and/or potential beneficial uses of surface waters in the vicinity of the Site include:

    a. Contact and non-contact water recreation
    b. Wildlife habitat
    c. Warm and cold fresh water habitat
    d. Fish migration and spawning

19. This action is an order to enforce the laws and regulations administered by the Board. This action is categorically exempt from the provisions of the CEQA pursuant to Section 15321 of the Resources Agency Guidelines.

20. The Board has notified the discharger and interested agencies and persons of its intent under California Water Code Section

13304 to prescribe Site Cleanup Requirements for the discharge and has provided them with the opportunity for a public hearing and an opportunity to submit their written views and recommendations.

21. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the discharger shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous materials in a manner which will significantly degrade water quality or adversely affect the beneficial uses of the waters of the State is prohibited.

2. Significant migration of pollutants through subsurface transport to waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup, that will cause significant adverse migration of pollutants, are prohibited.

B. SPECIFICATIONS

1. The treatment or disposal of soil or groundwater containing wastes shall not create a nuisance as defined in Section 13050 (m) of the California Water Code.

2. The discharger shall conduct monitoring activities reasonably necessary to define the current local hydrogeologic conditions, and the lateral and vertical extent of wastes present in the soil and groundwater at the Site. Should monitoring results show evidence of the migration of wastes, additional characterization will be required.

3. Any wells and/or soil borings penetrating the Newark Aquitard shall be constructed to minimize the potential for waste migration between the shallow zone and the Newark Aquifer.

4. Any wells installed by the discharger and identified as potential conduits for the migration of wastes shall be properly abandoned. A detailed workplan shall be submitted for review and approval, which describes the proposed methods of abandonment for each well identified.

C. PROVISIONS

1. The discharger shall review its existing groundwater monitoring program and shall propose within 60 days of the adoption of this Order, modifications as necessary to comply with this Order. This monitoring program shall be acceptable to the Board's Executive Officer. The proposed monitoring program shall include, but need not be limited to, the identification/location of sample wells, the frequency of water level and water quality sampling, and the identification of methods chosen for sample analysis.

2. The discharger shall comply with Prohibitions A.1., A.2. and A.3., and Specification B.1. and B.2., by completing the tasks outlined below in accordance with the following time schedule:

COMPLETION DATE/TASK:

a. COMPLETION DATE: September 15, 1989

TASK: EVALUATION OF KNOWN SHALLOW ZONE POLLUTION AND RECOMMENDED INTERIM REMEDIAL ACTIONS: Submit a technical report acceptable to the Executive Officer which reviews currently known groundwater pollution locations in the shallow zone at the discharger's Site, or off-site, where pollutants exist because of actions previously conducted by the discharger. The report shall also evaluate the various interim remedial alternatives available to minimize further water quality degradation in surface and groundwater, and recommend the preferred interim cleanup alternative, and a time schedule for implementation of the interim cleanup measures.

b. COMPLETION DATE: 90 days after the Executive Officer approves the recommended shallow zone interim remedial actions.

TASK: IMPLEMENTATION OF SHALLOW ZONE INTERIM REMEDIAL ALTERNATIVES: Submit a technical report acceptable to the Executive Officer documenting completion of the implementation of the preferred remediation as selected in Provision C.2.a. The implementation includes but is not limited to engineering designs, equipment procurement, construction and installation, start up, and permitting (e.g. building permits, conditional use

permits, air permits, discharge permits, hazardous waste variances, etc.).

c. COMPLETION DATE: November 15, 1989

TASK: SHALLOW ZONE CHARACTERIZATION AND POTENTIAL CONDUIT STUDY: Submit a technical report acceptable to the Executive Officer which defines and includes the results of work performed to complete the vertical and horizontal characterization of the extent of groundwater pollution in the shallow zone existing at the discharger's facility. This technical report shall include the results of a potential conduit study, and a summary and evaluation of all information the discharger has collected regarding the shallow zone groundwater pollution.

d. COMPLETION DATE: December 15, 1989

TASK: SHALLOW ZONE CLEANUP PLAN / FEASIBILITY STUDY: Submit a technical report acceptable to the Executive Officer which will identify and discuss the shallow zone cleanup alternatives, their feasibility, and their costs and benefits in relation to beneficial use protection, and recommend the preferred cleanup alternative, and a time schedule for implementation of the cleanup measures. The report shall also specify a network of monitoring wells which will document the effectiveness which remediation of the shallow zone will have at this Site, and on SBP operation, and any influences which have or may occur on plume migration at the sites of Ashland Chemical Company (Ashland), FMC Corporation (FMC), and Romic Chemical Corporation (Romic).

e. COMPLETION DATE: September 15, 1990

TASK: IMPLEMENTATION OF SHALLOW ZONE REMEDIAL ALTERNATIVES: Submit a technical report acceptable to the Executive Officer documenting completion of the implementation of the preferred remediation as selected in Provision C.2.d. The implementation includes but is not limited to engineering designs, equipment procurement, construction and installation, start up, and permitting (e.g. building permits, conditional use permits, air

permits, discharge permits, hazardous waste variances, etc.).

f. COMPLETION DATE: February 15, 1990

TASK: NEWARK AQUIFER HYDROGEOLOGIC/POLLUTION CHARACTERIZATION: Submit a technical report acceptable to the Executive Officer which defines and includes the results of work performed to complete the vertical and horizontal characterization of the extent of groundwater pollution in the Newark Aquifer existing at the discharger's facility. This technical report shall contain a summary and evaluation of all information the discharger has collected regarding the Newark Aquifer groundwater pollution.

g. COMPLETION DATE: May 15, 1990

TASK: NEWARK AQUIFER CLEANUP PLAN / FEASIBILITY STUDY: Submit a technical report acceptable to the Executive Officer which identify and discuss the Newark Aquifer cleanup alternatives in light of information collected in C.2.f., their feasibility, and their costs and benefits in relation to beneficial use protection. The report shall document and/or model the effectiveness which remediation of the Newark Aquifer will have at this Site, and on SBP operation, and any influences which have or may occur on plume migration at the sites of Ashland, FMC, and Romic.

3. On a quarterly basis, the discharger shall submit a technical report one month following the end of each quarter, commencing with a report for the quarter ending June 30, 1989 and due July 31, 1989. These quarterly technical reports shall include, but need not be limited to, the results of updated groundwater quality sampling of on-site and off-site wells, updated water table and potentiometric surface maps for all affected water bearing zones, any updated cross-sectional geologic maps describing the hydrogeological setting, and appropriately scaled and detailed base maps showing the location of all monitoring wells and extraction wells, and identifying adjacent facilities and structures (including well locations at adjacent sites). Data collection should be coordinated with pollution studies at Ashland, FMC, and Romic.

4. On an annual basis, for the previous calendar year, by the end of the second month following the calendar year, the discharger shall submit an annual technical report acceptable to the Executive Officer which shall document and evaluate the progress of remedial actions. This report shall contain, but not be limited to, information on the number of gallons of groundwater pumped and treated, where the waters were discharged, changes in groundwater quality, changes in the monitoring network, problems encountered in the past year with implemented and/or proposed solutions, and projected cleanup anticipated for the coming year.

5. All hydrogeological reports, documents, plans, and specifications, shall be certified by one of the following: a registered geologist, registered pursuant to Section 7850 of the Business and Professions Code; a certified engineering geologist, certified pursuant to Section 7842 of the Business and Professions Code; or a civil engineer registered pursuant to Section 6762 of the Business and Professions Code, who has at least five years experience in groundwater hydrology.

6. If the discharger is delayed, interrupted or prevented from meeting one or more of the completion dates specified in this Order for reasons beyond its reasonable control (permitting etc.), the discharger shall promptly notify the Executive Officer and the Board may consider revision to this Order extending the time for compliance for a reasonable period.

7. All samples shall be analyzed by State certified laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control records for Board review.

8. In order to effectuate Prohibition A.1., A.2., and A.3., and Specification B.1., and B.2., the discharger is encouraged to cooperate with Ashland, FMC, Romic, and ACWD.

9. The discharger shall maintain in good working order, and operate, as efficiently as reasonably possible, any facility or control system installed to achieve compliance with the requirements of this Order.

10. Copies of all correspondence, reports, and documents pertaining to compliance with the Prohibitions, Specifications, and Provisions of this Order, shall be provided to the following agencies:

a. Alameda County Water District
b. Alameda County Health Department
c. City of Newark
d. State Department of Health Services/TSCD

11. The discharger shall permit the Board or its authorized representative, in accordance with Section 13267(c) of the California Water Code:

    a. Entry upon premises in which any pollution sources exist, or may potentially exist, or in which any required records are kept, which are relevant to this Order.

    b. Access to copy any records required to be kept under the terms and conditions of this Order.

    c. Inspection of any monitoring equipment or methodology implemented in response to this Order.

    d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the discharger.

12. The discharger shall file a report on any changes in Site occupancy and ownership associated with the facility described in this Order.

13. If any hazardous substance is discharged in or on any waters of the State, or discharged and deposited where it is, or probably will be discharged in or on any waters of the State, the discharger shall report such discharge to this Regional Board, at (415) 464-1255 on weekdays during office hours from 8 a.m. to 5 p.m., and to the Office of Emergency Services at (800) 852-7550 during non-business hours. A written report shall be filed with the Regional Board within five (5) working days and shall contain information relative to: the nature of waste or pollutant, quantity involved, duration of the incident, cause of spill, Spill Prevention, Control, and Countermeasures Plan (SPCC) in effect, if any, estimated size of affected area, nature of effects, corrective measures that have been taken or planned, and a schedule of these activities, and persons/agencies notified.

14. The Board will review this Order periodically and revise the requirements as necessary to effectuate the intent of this Order in a prompt and reasonable manner.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on June 21, 1989.

Steven R. Ritchie
Executive Officer